AMENDMENTS TO CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. - 26. (Canceled)

27. (Currently Amended) A method comprising:

computing, by a wireless access point, a channel matrix that is representative of a channel response for each of a plurality of channels, said computing based at least in part on on training signals received over two or more antennas from multiple stations;

receiving from multiple stations, at the wireless access point, a plurality of uplinked spatial division multiple access (SDMA) data streams that are out of synchronism ~~by a time period greater than an allowed guard band time period~~;

converting the plurality of SDMA data streams from a first time domain to a frequency domain;

separating, with a spatial demapper, the plurality of SDMA data streams in the frequency domain into a separated plurality of data streams in the frequency domain based at least in part on the channel matrix;

converting the separated plurality of data streams from the frequency domain to a second time domain; and

synchronizing the separated plurality of data streams in the second time domain.

28. (Previously Presented) The method of claim 27, wherein the receiving comprises:

receiving at least some of the plurality of SDMA data streams as data streams that include a plurality of non-aligned orthogonal frequency division multiplexed symbols.

29. (Previously Presented) The method of claim 27, wherein the receiving comprises:

receiving the plurality of SDMA data streams in response to a polling communication.

30. (Previously Presented) The method of claim 29, wherein the polling communication comprises multiple polling messages overlapping in time and corresponding in number to the multiple stations.

31. (Previously Presented) The method of claim 27, wherein the separating comprises:

separating the plurality of SDMA data streams using a channel matrix.

32. (Cancelled)

33. (Previously Presented) The method of claim 27, wherein the separating comprises:

separating the plurality of SDMA data streams into a separated plurality of data streams, wherein at least some of the separated plurality of data streams have different frequency offsets.

34. (Previously Presented) The method of claim 27, wherein a number of the separated plurality of data streams correspond to a like number of wireless channels.

35. (Currently Amended) An article comprising a memory have instructions stored thereon, wherein the instructions, when executed, cause the processor to perform:

computing, by a wireless access point, a channel response for each of a plurality of channels based on training signals received over two or more antennas from multiple stations, the computed channel response includes at least a channel matrix;

converting a plurality of spatial division multiple access (SDMA) data streams from a first time domain to a frequency domain after the plurality of SDMA data streams have been received as a plurality of uplinked SDMA data streams that are out of synchronism ~~by a time period greater than an allowed guard band time period~~;

separating the plurality of SDMA data streams in the frequency domain into a separated plurality of data streams in the frequency domain based on the channel matrix;

converting the separated plurality of data streams from the frequency domain to a second time domain; and

synchronizing the separated plurality of data streams in the second time domain.

36. (Previously Presented) The article of claim 35, wherein the separating comprises:

separating the plurality of SDMA data streams at a wireless access point.

37. (Previously presented) The article of claim 35, wherein the plurality of channels correspond in number to a number of the plurality of SDMA data streams.

38. (Previously Presented) The article of claim 35, wherein the synchronizing comprises:

synchronizing at least one of the separated plurality of data streams after detecting a boundary between preambles.

39. (Previously Presented) The article of claim 35, wherein the instructions, when executed, cause the processor to perform:

estimating a coarse frequency offset between receiver and transmitter oscillator clocks.

40. (Previously Presented) An apparatus, including:

a separation module to separate a plurality of spatial division multiple access (SDMA) data streams into a plurality of separated data streams, in a frequency domain, after the plurality of SDMA data streams have been converted from a first time domain to the frequency domain, wherein the separation module is configured to separate the plurality of SDMA data streams in the frequency domain based at least in part on a channel matrix, and wherein the plurality of SDMA data streams have been received as a plurality of uplinked SDMA data streams that are out of synchronism by a time period greater than an allowed guard band time period; and

a synchronization module to synchronize the separated plurality of data streams in a second time domain after the separated plurality of data streams have been converted from the frequency domain to the second time domain.

41. (Previously Presented) The apparatus of claim 40, wherein the separation module comprises:

a spatial demultiplexer to provide the separated plurality of data streams.

42. (Previously Presented) The apparatus of claim 40, wherein the separation module comprises:

a module to perform a fast Fourier transform on the plurality of SDMA data streams.

43. (Previously Presented) The apparatus of claim 40, wherein the separation module comprises:

a module to perform an inverse fast Fourier transform on at least one of the separated plurality of data streams.

44. (Previously Presented) A system, comprising:

a separation module to separate a plurality of spatial division multiple access (SDMA) data streams into a plurality of separated data streams, in a frequency domain, after the plurality of SDMA data streams have been converted from a first time domain to the frequency domain, wherein the separation module is configured to separate the plurality of SDMA data streams in the frequency domain based at least in part on a channel matrix, and wherein the plurality of SDMA data streams have been received as a plurality of uplinked SDMA data streams that are out of synchronism by a time period greater than an allowed guard band time period;

a synchronization module to synchronize the separated plurality of data streams in a second time domain after the separated plurality of data streams have been converted from the frequency domain to the second time domain; and

a wireless access point coupled to a plurality of antennas to receive the plurality of SDMA data streams.

45. (Previously Presented) The system of claim 44, wherein the channel matrix is a Q x P matrix, the system further comprising;

a processor to form the Q x P channel matrix, wherein the plurality of antennas comprises Q antennas, and wherein the plurality of SDMA data streams comprises P data streams.

46. (Previously Presented) The system of claim 44, wherein the wireless access point is to train at least one channel for at least some of a plurality of stations associated with the plurality of SDMA data streams.

47. (Previously Presented) The method of claim 27, wherein at least two of the plurality of uplinked SDMA data streams are out of synchronism greater than 0.8 microseconds.